## AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

## **LISTING OF CLAIMS**

1. (Currently Amended) A shift control system for controlling gear shifts in a vehicle, comprising:

a transmission;

a controller that detects driving conditions of said vehicle, that indicates a downshift of said transmission based on said driving conditions, that estimates a traction load of said vehicle, that determines a current traction load of said vehicle, that selectively inhibits said downshift <u>if a square of based on said current traction load is less than a square of and said estimated traction load.</u>

- 2. (Cancelled)
- 3. (Original) The shift control system of claim 1 wherein said controller determines said current traction load based on a lateral acceleration signal and a longitudinal acceleration signal.
- (Original) The shift control system of claim 3 further comprising:
   a lateral accelerometer that generates said lateral acceleration signal; and
   a longitudinal accelerometer that generates said longitudinal acceleration signal.

- 5. (Original) The shift control system of claim 3 wherein said controller calculates said longitudinal acceleration based on a change in vehicle speed over time.
- 6. (Original) The shift control system of claim 1 wherein said controller estimates said traction load based on a curb weight of said vehicle, a weight transfer gain and an acceleration signal.
- 7. (Original) The shift control system of claim 6 further comprising an accelerometer that generates said acceleration signal.
- 8. (Original) The shift control system of claim 6 wherein said weight transfer gain represents changes in vehicle weight distribution based on vehicle acceleration.
- 9. (Currently Amended) A method of controlling automatic transmission shifts in a vehicle, comprising:

detecting driving conditions of said vehicle;

indicating a downshift of a transmission based on said driving conditions;

estimating a traction load of said vehicle;

calculating a current traction load of said vehicle; and

selectively inhibiting said downshift if a square of based on said current traction load is less than a square of and said traction load.

- 10. (Original) The method of claim 9 wherein said current traction load is based on a lateral acceleration signal and a longitudinal acceleration signal.
- 11. (Original) The method of claim 10 further comprising:
  generating said lateral acceleration signal with a lateral accelerometer; and
  generating said longitudinal acceleration signal with a longitudinal accelerometer.
- 12. (Original) The method of claim 10 wherein said longitudinal acceleration is calculated based on a change in vehicle speed over time.
- 13. (Previously Presented) The method of claim 9 wherein said traction load is based on a curb weight of said vehicle, a weight transfer gain and an acceleration signal.
- 14. (Original) The method of claim 13 further comprising generating said acceleration signal with an accelerometer.
- 15. (Original) The method of claim 13 wherein said weight transfer gain represents changes in vehicle weight distribution based on vehicle acceleration.
- 16. (Currently Amended) A method of controlling automatic transmission downshift of a vehicle, comprising:

detecting downshift conditions;

estimating a traction load of said vehicle based on a lateral acceleration signal;

estimating a current traction load of said vehicle based on a longitudinal acceleration signal; and

selectively inhibiting said downshift <u>if a square of based on said current traction</u> load is less than a square of and said traction load.

- 17. (Original) The method of claim 16 further comprising:

  generating said lateral acceleration signal with a lateral accelerometer; and

  generating said longitudinal acceleration signal with a longitudinal accelerometer.
- 18. (Original) The method of claim 16 wherein said longitudinal acceleration signal is calculated based on a change in vehicle speed over time.
- 19. (Original) The method of claim 16 wherein said traction load is based on a curb weight of said vehicle, a weight transfer gain and an acceleration signal.
- 20. (Original) The method of claim 19 further comprising generating said acceleration signal with an accelerometer.
- 21. (Original) The method of claim 19 wherein said weight transfer gain indicates changes in vehicle weight distribution based on vehicle acceleration.
- 22. (New) A shift control system for controlling gear shifts in a vehicle, comprising: a transmission;

a controller that detects driving conditions of said vehicle, that indicates a downshift of said transmission based on said driving conditions, that estimates a traction load of said vehicle, that determines a current traction load of said vehicle, that selectively inhibits said downshift if a magnitude of said current traction load is less than a magnitude of said estimated traction load.

23. (New) A method of controlling automatic transmission downshift of a vehicle, comprising:

detecting downshift conditions;

estimating a traction load of said vehicle based on a lateral acceleration signal;

estimating a current traction load of said vehicle based on a longitudinal acceleration signal; and

selectively inhibiting said downshift if a magnitude of said current traction load is less than a magnitude of said traction load.